NYU TANDON SCHOOL OF ENGINEERING

Department of Electrical & Computer Engineering
ECE–GY 5373: Internet Architecture & Protocols – Syllabus

Lecture: Saturday, 2:00 - 4:30pm US ET
Classroom: Dibner Pfizer Auditorium (max. 51 seats)
Online lecture: Zoom link available to enrolled students

Instructor: Dr. Z. John Zhao, zz342@nyu.edu
Online office hour: Monday 5:00 – 6:00 PM

Lab Instructors: Dr. Farida Fund, ffund@nyu.edu

Course Graders: TBA

Overview: This course introduces basic networking technologies and protocols in a set of lectures and laboratory experiments. It covers the following topics:

- Data link layer protocols: Ethernet, PPP, IEEE 802.11.
- The Internet Protocol Suite: IP, ARP, RARP, ICMP, IGMP, UDP and TCP.
- Local Area Network (LAN), Wide Area Network (WAN) interconnections: Bridges (spanning tree algorithm), Routers (routing algorithms), Gateways.`
- Application protocols: FTP, TFTP, SMTP, HTTP, DHCP, SNMP.
- Ping and traceroute programs.

Course Prerequisites: Students must have completed UY-EE 1363 (Principles of Communication Networks) or equivalent.

Textbook

TCP/IP Essentials - A Lab Based Approach", by S. Panwar, S. Mao, J. Ryoo, and Y. Li Cambridge Press, ISBN-10: 052160124X or ISBN-13: 978-0521601245.

- This book will also be used as a reference book for the labs.
- Each student is required to have his/her own copy of the textbook.

Laboratory Description: A telecommunication networks laboratory, implemented in GENI (Global Environment for Network Innovations) environment, is set up to provide the students with virtual networking and distributed systems such as user stations, Ethernet LANs, Ethernet hubs, Router, Bridges, etc.

Course Work: All students are required to use NYU Classes website for course logistics and content: announcements, class notes, quizzes, and solutions. Note students also have access to a separate NYU Classes site for the lab component of this course to distribute lab materials.

In addition to lecture notes, quiz solutions, and lab assignments, there will be four sets of homework questions provided as study reference. Homework questions will not be graded, but solutions will be made available.

Grading & Exams

- Class quizzes: 15%
- Labs: 20%
- Midterm exam: 30%
- Final exam: 35%

Exam type: Open-book with textbook, class notes, and course materials in NYU Classes.

Collaboration

Students are encouraged to discuss the labs, reports and homework with each other. However, except for team projects, your written submission, lab reports and exam papers, must be your own work. The first violation of this policy will result in zero point on that assignment and a reduction in your final grade (for example, from B+ to B). A second violation will result in an F grade. For additional information see school's Student Code of Conduct.

Equal educational opportunity and participation for students with disabilities

NYU Moses Center for Students with Disabilities provides comprehensive services and programs. Students with disabilities may get registered there for needed supports.

Tentative Schedule

Fall 2020 School Week (Mon. – Sat.)	Saturday Lectures	Lab Sections	
		Tuesday	Thursday
Week1 (9/2-**9/5**)	Lecture 1 - TCP/IP overview	No labs	
Week2 (9/7-**9/12**)	Lecture 2 - TCP/IP overview (cont'd)	Lab0	
Week3 (9/14-**9/19**)	Lecture 3 - Single segment network	Lab1	
Week4 (9/21-**9/26**)	Lecture 4 - L2 LAN	Lab2	
Week5 (9/28-**10/3**)	Lecture 5 - Routing	Lab3	
Week6 (10/5-**10/10**)	Lecture 6 - UDP & applications	Lab4	
Week7 (10/12-**10/17**)	Lecture 7 – TCP intro. **Review**	Lab5	
Week8 (10/19-**10/24**)	**Saturday Oct. 24th PM, Midterm Exam**	No labs	
Week9 (10/26-**10/31**)	Lecture 8 - TCP/IP applications	No labs	
Week10 (11/2-**11/7**)	Lecture 9 - Multicast, RT Applications	Lab6	
Week11 (11/9-**11/14**)	Lecture 10 - HTTP, DHCP, NAT, …	Lab7	
Week12 (11/16-**11/21**)	Lecture 11 - SNMP, Network Security	Lab8	
Week13 (11/23-11/28)	**Saturday Nov. 28th, No class**	Lab9 (Tu)	No Th lab
Week14 (11/30-**12/5**)	Lecture 12 - Supplement topics: IPv6, …	No Tu Lab	Lab9 (Th)
Week15 (12/7-**12/12**)	**Review**	No labs	
Week16 (12/14-**12/19**)	**Saturday Dec. 19th PM, Final Exam**	No labs	